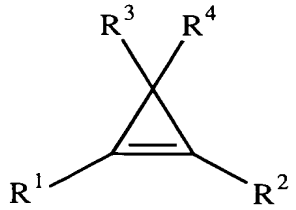
We claim:

1. A method of inhibiting an ethylene response in a plant, comprising contacting the plant with an effective ethylene response-inhibiting amount of a compound of the formula:



wherein:

a) from 1 to 4 of R^1, R^2, R^3, and R^4 are each independently selected from the group consisting of: monohalomethyl, dihalomethyl, trihalomethyl, monohaloethyl, dihaloethyl, monohalopropyl, monohaloisopropyl, 1-hydroxymethyl, 1-hydroxyethyl, 2-hydroxyethyl, 1-hydroxypropyl, 2-hydroxypropyl, 3-hydroxypropyl, 1-hydroxy-1-methylethyl, 2-hydroxy-1-methylethyl, 1-amino-2-hydroxyethyl, 1-halo-2-hydroxyethyl, 2-amino-1-hydroxyethyl, 2-halo-1-hydroxyethyl, 1,2-di-hydroxyethyl, 1-methoxymethyl, 1-ethoxymethyl, 1-methoxyethyl, 2-methoxyethyl, 1-aminomethyl, 1-aminoethyl, 2-aminoethyl, 1-amino-propyl, 2-aminopropyl, 3-aminopropyl, 1-amino-1-methylethyl, 2-amino-1-methylethyl, 1,2-diaminoethyl, 1-methylaminomethyl, 1-ethyl-aminomethyl, 1-methylaminoethyl, 2-methylaminoethyl, dimethylaminomethyl, -CH=NOH, -CMe=NOH, $-CH_2CH$=NOH, -CH=NOMe, $-NHNH_2$, $-NMeNH_2$, -NHNHMe, $-NEtNH_2$, -NHNHEt, $-NHNMe_2$, -NMeNHMe, $-CH_2NHNH_2$, $-CH_2CH_2NHNH_2$, $-CH_2NMeNH_2$, $-CH_2NHNHMe$, $-CONH_2$, $-CH_2CONH_2$, -NHCOR, -NHCOMe, -NMeCOH, -CONHMe, $-CO_2Me$, OCO_2R, -OCOH, -OCOMe, 1-cyanomethyl, 1-cyanoethyl. 2-cyanoethyl, $-CH_2CO_2H$; unsubstituted or substituted nitro(C_1-C_{12})-alkyl , unsubstituted or substituted nitro(C_1-C_{12})alkenyl, unsubstituted or substituted nitro(C_1-C_{12})alkynyl, unsubstituted or substituted azido(C_1-C_{12})alkyl, unsubstituted or substituted azido(C_1-C_{12})-alkenyl, and unsubstituted or substituted

azido(C_1-C_{12})alkynyl wherein the substituents are from 1 to 5 and selected from halo, cyano, nitroso, chlorate, bromate, iodate, isocyanato, isocyanido, isothiocyanato, pentafluorothio; and

b) from 0 to 3 of R^1, R^2, R^3, and R^4 are each independently selected from the group consisting of hydrogen; (C_1-C_4)alkyl, (C_1-C_4)alkenyl, (C_1-C_4)alkynyl, halo, (C_1-C_3)alkoxy, -OCH2CH=CH2, -OCH2C≡CH, -NH_2, -NHMe, -NHEt, -NH(*n*-Pr), -NH(*i*-Pr), -NMe_2, -NMeEt, -CO_2H, or -NO_2; and

its enantiomers, stereoisomers, salts, and mixtures thereof;

or a composition thereof.

2. The method of claim 1, wherein 2 of R^1, R^2, R^3, and R^4 are hydrogen.
3. The method of claim 1, wherein R^1 and R^2 are hydrogen or R^3 and R^4 are hydrogen.
4. The method of claim 1, wherein R^2, R^3, and R^4 are hydrogen.
5. The method of claim 1, wherein R^1, R^2, and R^4 are hydrogen.
6. The method of claim 1, wherein the ethylene response is one or more of ripening or senescence of flowers, fruits, and vegetables; abscission of foliage, flowers, and fruit; the shortening of life of ornamental plants, cut flowers, shrubbery, seeds, or dormant seedlings; inhibition of growth; stimulation of growth; auxin activity; inhibition of terminal growth; control of apical dominance; increase in branching; increase in tillering; changing the morphology of plants, modifying the susceptibility to plant pathogens such as fungi, changing bio-chemical compositions; abortion or inhibition of flowering or seed development; lodging effects; stimulation of seed germination; breaking of dormancy; hormone effects; and epinasty effects.
7. The method of claim 1, wherein R^1 is monohalomethyl, dihalomethyl, trihalomethyl, monohaloethyl, dihaloethyl, monohalopropyl, monohaloisopropyl, 1-hydroxymethyl, 1-hydroxyethyl, 2-hydroxyethyl, 1-hydroxypropyl, 2-hydroxypropyl, 3-hydroxypropyl, 1-hydroxy-1-methylethyl, 2-hydroxy-1-methylethyl, 1-amino-2-hydroxyethyl, 1-halo-2-

hydroxyethyl, 2-amino-1-hydroxyethyl, 2-halo-1-hydroxyethyl, 1,2-di-hydroxyethyl, 1-methoxymethyl, 1-ethoxymethyl, 1-methoxyethyl, 2-methoxyethyl, 1-aminomethyl, 1-aminoethyl, 2-aminoethyl, 1-amino-propyl, 2-aminopropyl, 3-aminopropyl, 1-amino-1-methylethyl, 2-amino-1-methylethyl, 1,2-di-aminoethyl, 1-methylaminomethyl, 1-ethyl-aminomethyl, 1-methylaminoethyl, 2-methylaminoethyl, or dimethylaminomethyl; and R^2, R^3, and R^4 are hydrogen.

8. The method of claim 1, wherein R^1 is hydroxymethyl or 2-hydroxyethyl.